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CENTRAL INTELLIGENCE AGENCY

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50X1-HUM

COUNTRY USSR (Moscow Oblast)

REPORT

SUBJECT Shchelkovo and Karbolit Chemical Plants

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Shchelkovo Chemical Combine

1. The Shchelkovo Chemical Combine, which was subordinate to the former Ministry of Chemical Industries, employed between 900 and 1,000 persons. It was located on the Shchelkovo highway that ran to Monino, about 80 or 100 meters back from the road and about 300 meters from a spur line that ran directly to the plant. The Combine faced north. On the east, it was bounded by a brick wall about 2.5 meters high that was topped with a two-meter-high barbed-wire fence. On the north and south, it was bounded by a barbed-wire fence about two meters high. On the west, it was limited by the Textile Combine and by apartment buildings.

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2. Following were the raw materials used at the Combine: quicklime, a caustic solution, copper sulphate, arsenic, powdered soda, compressed air, coal, greases, wood, nails, Fe_2S_5, lead, common salt, oxygen, all kinds of fish, generally large and rotten, which were used for making insecticides in Shop No. 17, dolomite which was mixed with waste in the foundry, Melans, and heavy oils. The dolomite was extracted in Shchelkovo from quarries located north of the Listoprokatnyy Zavod. Almost

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all raw materials entered the plant via rail; the arsenic, bottles of tiofos, copper sulphate, and bottles of oxygen entered via truck.

3. Constant efforts were made to increase production. The plant tended to expand in the direction of the river and in the space separating it from a turbine plant. if necessary, the tiofos shop could be converted to the production of gases.

4.

Karbolit Chemical Plant

5. The Karbolit Chemical Plant was located about 10 kilometers south of Orekhovo Zuyevo (N 55-49, E 38-59) in the village of Karbolit formerly known as Dubrovka (N 55-51, E 39-12). the plant and the village of Karbolit were located about two kilometers south of Orekhovo Zuyevo to 10 kilometers. this was a non-military or a non-defense plant subordinate to the former Ministry of Chemical Industries, but she was unable to identify any intermediary organizational offices between the ministry and plant; neither was she able to provide an organizational structure of the plant.

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6. The official name of the plant was the Karbolit Chemical Plant (Khimicheskiy Zavod 'Karbolit'), commonly referred to as Karbolit. It was situated in an area about one kilometer square which fronted on ulitsa Dzerzhinskogo. The other three sides of the plant bordered on open and wooded areas as opposed to other streets or populated areas. Although there were no rumors or visible evidence of such, there was more than sufficient space for a great amount of plant expansion.

7. The plant territory was surrounded by a plain wooden fence about three meters high. The fence had no barbed wire, but wooden watchtowers about four meters high were intermittently spaced at unknown intervals along the fence. These towers were manned by male members of the plant security section the existence of these towers was intended for the prevention of thievery by the workers as opposed to providing strict security supervision as might be imposed at a defense plant.

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8. Except for some small bakelite, plastic and textolite parts for aircraft, the plant produced plastic and bakelite parts for civilian use. This included various electrical fixtures and allied equipment such as switches, faceplates, plugs, sockets, etc., large plastic wheels used for an unknown purpose within the subway system, combs, various sized plastic wheels and toys. All items produced at the plant were sent to the plant warehouse from where they were sent to their final destinations. all items were packed in cardboard and wooden boxes. all shipments to and from the plant were by truck.

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9. A ten-page report on the general layout of the plant, a listing of some plant personnel, and general information on the plant's technical school as Attachment 2 of this report.

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SHCHELKOVO CHEMICAL COMBINE

1. The Shchelkovo Chemical Combine, which was subordinate to the Ministry of Chemical Industries, employed between 900 and 1,000 persons. It was located on the Shchelkovo highway that ran to Monino, about 80 or 100 meters back from the road and about 300 meters from a spur line that ran directly to the plant. The Combine faced north. On the east, it was bounded by a brick wall about 2.5 meters high that was topped with a two-meter-high barbed-wire fence. On the north and south, it was bounded by a barbed-wire fence about two meters high. On the west, it was limited by the Textile Combine and by apartment buildings. 50X1-HUM

2. Following is the legend for sketch of the Combine, on page 15.

(1) Moscow-Monino railroad line. A spur line originating about 250 meters from the Shchelkovo station entered the plant area.

(2) Iron water tower about six meters high and 12 meters in diameter, which supplied water to the city of Shchelkovo and to the plant. It was on a concrete base nine or ten meters high with a door leading to a room housing the motor that pumped water into the tank.

(3) Road from the station to the city.

(4) Open lot.

(5) Highway to Monino that bore the same name as the plant.

(6) Athletic field.

(7) Shchelkovo railroad station.

(8) Road leading to the Textile Combine's new plant.

(9) Plant dining room, a well ventilated one-story brick building measuring 40 meters square by about five meters high.

(10) Club, a one-story brick building measuring 80 x 40 meters high, with facilities for table tennis, movies, theater, library, chess, fencing, etc.

(11) Shchelkovo-Monino railroad.

(12) Sawmill that did not belong to the plant.

(13), (14), and (15) Apartment houses.

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(16) Shop producing 100 percent pure sulphuric acid by the contact method. The brick building measured about 40 x 60 meters; A total of about 60 persons worked three shifts.

(17) Insecticides shop, a one-story brick building measuring about 30 meters square, that produced insecticides in powdered and liquid form for use in aerial crop dusting. A total of about 30 persons worked three shifts. 50X1-HUM

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(18) Administrative offices, a two-story brick building measuring about 25 or 30 meters by 10 meters. The director's office was on the ground floor and the administrative, shipping, and inspection offices were on the second floor. A total of about 20 persons worked in this building.

(19) Firehouse, a two-story brick building measuring 50 x 70 meters. It contained three fire trucks, three tank trucks, a ladder truck with a very wide closed chute used for rescuing persons from high places, and three small trucks with small ladders. Firemen were uniformed and wore helmets and masks. They carried a pack containing two bottles of unknown contents to generate a protective shower when needed. The firemen were professional; 50X1-HUM many fire drills in which rescue work was done from a wall about 12 to 15 meters high, with the use of the closed escape chute. In spite of the fact that the city had a fire 50X1-HUM station, the plant firehouse really served the city because it had better equipment and its personnel were better trained.

(20) Apartment buildings.

(21) Plant waste materials, red in color. When they were hot, they smelled very slightly of burned sulphur. Plant waste materials were transported to piles which were about as high as the plant 50X1-HUM building. These waste materials were loaded in trucks not belonging to the plant they were used 50X1-HUM as pigments in paints. On a few occasions, these waste materials were re-smelted to extract the iron left in them; however this practice was not successful 50X1-HUM because the process cost more than the reclaimed iron was worth.

(22) Shop building measuring 80 meters square that was surrounded by a barbed-wire fence; this shop produced carbon sulfide [sic], a very inflammable product. The shop was illuminated from the exterior by large floodlights (40 x 50 centimeters in diameter) that were placed one to each window. This shop belonged to the "first category" [sic], as did Shops Nos. 46, 51, and 52. Workers received a special diet consisting of foods rich in albumin, proteins, and vitamins, and all the milk they desired. Employees worked a six-hour 50X1-HUM shift on four successive days, then rested one day. There were four six-hour shifts employing a total of 120 men. The workers wore face masks to protect themselves from the gases.

(23) Two-story building. Entrance passes were presented on the ground floor as were the vouchers to pick up plant products; the second floor contained living quarters for guard personnel, and the photographic laboratory that made photographs for plant employees' identification cards.

(24) Food products storehouse, a two-story building. On the ground floor, food products were dispensed to plant personnel and to civilian personnel who wished to buy at the plant. The second floor contained living quarters for the storehouse personnel.

(25) Apartment houses.

(26) Six or seven fuel tanks embedded in the earth so that one-half of each tank was underground. Manual gasoline pumps were used to dispense fuel to plant cars and trucks.

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(27) Interior roadway of the plant.

(28) Chemical salts shop, a two-story building measuring about 50 or 60 by 30 meters. 50X1-HUM the salts were very clean and so fine they were almost a powder. One shipment of these salts was made to the Voskresenskiy Khimicheskiy Kombinat in Voskresenskoye. A light truck was fully loaded with one and one-half tons of these salts packed in one-and-one-half-liter glass jars that had brown plastic stoppers bearing the name Shchelkovskiy Khimicheskiy Kombinat; this truck was not escorted.

(29) Main laboratory, a one-story brick building measuring about 40 x 20 meters. This laboratory analyzed and combined the different products to make the best possible use of them. 50X1-HUM it was not a secret shop because it employed Heading this laboratory was a female chemical engineer from the Academy of Sciences USSR in Moscow, located on Bolshaya Kaluzhskaya ulitsa. This laboratory employed from eight to ten persons. 50X1-HUM

(30) Labor union offices, a one-story building measuring about 10 x 12 meters. Here were kept the records of leaves of absence, hospitalization, and everything concerned with the workers' lives. From six to ten persons were employed in this office.

(31) and (32) Apartment houses.

(33) Electric motor repair shop, a one-story building measuring about 12 x 15 meters; it repaired all plant electric motors, employing from about 20 to 25 workers on one shift. 50X1-HUM

(34) Printing shop for the plant newspaper, Khimik, of which 2,000 copies were printed. The building measured about 8 x 12 meters and employed about six persons.

(35) Apartment houses.

(36) Water tower, similar to that described under No. 2; it measured four meters high and was auxiliary to No. 2.

(37) Apartment houses.

(38) Telpher conveyor system. Plant waste was transported by wheelbarrow to point No. 38, then via the telpher system to the pile of waste materials.

(39) Glover towers, about ten meters high and five meters in diameter, made of acid-resistant brick, and covered on the outside with sheet lead 12 millimeters thick. These towers produced sulphuric acid.

(40) Sulphuric acid shop. (Unless otherwise specified, points mentioned refer to the sketch on page 16). This shop measured about 20 x 60 or 70 meters, and had one story although it might be considered to have had three since two metal crosswalks divided the building height into thirds, and there was a platform at the top of the building just below the roof. Small railroad cars rode on rails

installed on this platform. The Glover process was followed, using as raw material $Fe_2 S_5$ [sic] which was stored in two bunkers and transported by a concave conveyor belt 1.25 meters wide to two hoppers located at the highest part of the shop. The raw material passed from these hoppers directly to the ovens (4) which had six compartments at different temperatures; the hottest compartment was No. 4, which was as far as the air reached. Compartment No. 6 was located at the top of the oven, and compartment No. 1 was located at the bottom. These ovens roasted crushed ore to produce SO_2 which was filtered [sic] in chambers (7) that measured about four meters high by two meters wide; a metallic net not further described hung from porcelain insulators located in the highest part of the chambers. This net was connected to a high tension line, and solids collected on it. From the chambers (7), the gas passed to water tanks (13) for cooling; these tanks had helical pipes along the entire length of the walls. The gas was then piped to the Glover towers, which had a diameter of 1.5 meters; in these towers, the gas was sprayed with water and Melans [sic], then piped to tanks (11); it was sprayed again with water, then piped to storage tanks (17, 18). The product was 76 percent pure, and could be made 85 percent pure. This shop employed about 100 persons in three shifts, 40 on the first shift, and 30 on each of the other two shifts.

(41) Machinery repair shop, a one-story building measuring about 60 x 70 meters that employed about 200 persons on two eight-hour shifts. This shop repaired all plant machinery, using lathes, milling machines, drill presses, winding machines, and small machines not further described; all shop machinery was of Soviet make and in good operating condition. The shop also had two electric furnaces that smelted part of the plant waste, producing unspecified small quantities of ingots that were sent to the Shchelkovo sheet metal plant.

(42) Electrical substation, a one-story building measuring about 15 x 6 meters adjoining No. 41; it contained all the control panels and circuit breakers, and was the point from which electricity was supplied to all the shops. About 12 persons worked at the substation; considered to be auxiliary to the Shchelkovo electric power station, which supplied the electric power.

(43) One-story building measuring about 12 x 7 or 8 meters that housed the Komsomol and the Communist Party organizations.

(44) Pile of plant waste materials similar to No. 21.

(45) Hut occupied by the person in charge of transporting waste from point No. 19 on the sketch on page 16 to Nos. 21 and 44 on the sketch on page 15. This hut contained the motor for the telpher conveyor system.

(46) Tiofos [thiophosphoric acid?] shop, a one-story brick building that measured about 40 x 30 meters, had a cement floor, and large windows that were always kept shut in order to keep an unidentified gas from escaping. This shop measured about 40 x 30 meters, was elevated one and one-half meters above ground level, and entry to the shop was prohibited. It smelled of very strong iodine. dark brown bottles of chlorine received at the shop; there was a large pile of these bottles, which were about the size of a two-quart

thermos bottle and seemed to be of iron. These bottles were stored inside the shop as soon as they were received. This shop had suffered two explosions; the first, in 1949, destroyed the shop and broke most of the window glass in the plant. The second, in spring 1952, the building collapsed and most of the plant windows were broken. No persons were killed in either of the explosions. Workers on duty the day of the 1949 explosion were questioned. After the second explosion, the building had been completely destroyed. electric furnaces that measured about 1.6 meters wide by about eight meters deep and 1.25 meters high, each of which was of white tile and had three pipe connections ten centimeters in diameter. Inside the building, there were many twisted pipes. a few water tanks similar to small bathtubs with coils in the middle that ran from the top to the bottom; the water in them was constantly replenished.[2] In winter, the workers in this shop wore their masks to keep warm. These masks were white, whereas other workers' were dark green, and the purifying pack must have contained some other compound. This shop employed about 30 persons in four shifts, while another shift rested. At the entrance to this shop was a sign prohibiting entry.

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(47) Lead tanks with walls about 14 millimeters thick. These tanks stored all the acid produced in Shop No. 40. One measured from four to five meters high by about 12 or 14 meters in diameter, and was installed on concrete pillars. Two smaller tanks (No. 17 on the sketch on page 16), about six meters in diameter, were located to one side of the largest tank. there were great stocks of this material.

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(48) Auxiliary tanks to No. 47.

(49) Open-air storage of empty casks; an open patio storing casks used for quicklime.

(50) Loading platform about 110 centimeters high where items to be shipped by rail were sent. It measured about 120 meters long by 25 or 30 meters wide, and was protected by a uralite roofed shed. The installation also served as a storehouse.

(51) Calcium arsenite shop, a three-story building about 50 meters square. The first floor contained boilers two and a half meters high by three in diameter; metallic inside, they were covered with plaster outside and painted black. They received the finished product, which looked like a greenish paste and was odorless. This product was also made in powdered form. The second floor contained mills that ground the product when it was to be produced in powdered form. The third floor contained the machines that began the manufacturing process. This shop employed about 30 persons in five shifts. Workers used the following clothing: knee-high rubber boots, partyanki (a bandage-like, 25-centimeter-wide strip of cloth wrapped around the foot and ankle), a gauze and cotton mask for mouth and nose, the same type of mask to protect the genitals, the same type of mask with a small amount of bicarbonate of soda added to protect mouth and nose when the gases were very dense, normal long white shorts, white long-sleeved cotton undershirs, normal coveralls with wristbands, impermeable gray plastic cap lined with felt, elbow-length rubber gloves, and tight-fitting goggles. This same equipment was worn in Shops No. 22, 46, and 52.

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(52) Calcium arsenate shop, a three-story brick building measuring about 60 meters square by about 18 meters high, with a pitched uralite roof of a light gray color. (See sketches on pages 17 through 19.) It had a 25-meter-high chimney, rectangular at the base and measuring about eight meters by four or five meters; the chimney had six bands. It had both forced draft and exhaust fans. During the manufacturing process, there was an odor similar to that of half-slaked lime or of dampness.

(53) Quicklime storage bins measuring 23 x 30 meters; the lower two meters were of brick, the remaining meter and one-half was of wood. The quicklime was discharged from the railroad and transported to these bins, which always contained a large quantity of quicklime.

(54) Wooden sentry boxes guarding Shops Nos. 51 and 52; they were permanently manned by plant personnel bearing pistols who had completed their military service.

(55) Arsenic and copper sulphate storage, a wooden building measuring 8 x 10 meters. These materials arrived by truck and were used by Shops Nos. 51 and 52.

(56) Shop in which receptacles were cleaned by sand blasting; it was a brick building that measured about 15 x 6 meters, and employed five or six persons.

(57) Two-story wooden building measuring 30 meters square. The ground floor contained the personnel and housing offices; the second floor was used as housing by plant personnel.

(58) Showers.

(59) Kennels containing nine dogs and surrounded by a wire fence. At nightfall, three of these dogs were taken to the northern part where the barbed-wire fence was; one dog was stationed at the south, another at the east, and another at the west. Guards living at point No. 23 on the sketch on page 15 used the three remaining dogs on their rounds.

(60) Storage for pickaxes, shovels, baskets, and sacks; it measured 5 x 12 meters.

(61) Two-story brick building measuring 12 x 15 meters. The ground floor was a storehouse and the second floor contained a store where toilet articles and sweets were sold.

3. Following are the raw materials used at the Combine: quicklime, a caustic solution, copper sulphate, arsenic, powdered soda, compressed air, coal, greases, wood, nails, Fe_2S_5, lead, common salt, oxygen, all kinds of fish, generally large and rotten, which were used for making insecticides in Shop No. 17, dolomite which was mixed with waste in the foundry, Melans, and heavy oils. The dolomite was extracted in Shchelkovo from quarries located north of the Listoprokatnyy Zavod. Almost all raw materials entered the plant via rail; the arsenic, bottles of tiofos, copper sulphate, 50X1-HUM and bottles of oxygen entered via truck. 50X1-HUM

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4. The electrical substation was described in paragraph 2 (item No. 42). The Shchelkovo electric power line was the only one to enter the plant. In Shop No. 52 there was 380-volt electrical service.

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5. The sulphuric acid was transported in tank cars; the calcium arsenate and arsenite, in corrugated metal receptacles measuring about 0.45 x 0.60 meters; the insecticides, in corrugated metal containers measuring 1 x 0.45 meters. The legend Khim Zavod, weight, water content, and product name were indicated on the exterior. Precautions in loading and unloading were directed only at avoiding breakage of the containers.

6. The railroad line which entered the plant was of standard Soviet gauge and connected with the Shchelkovo-Monino line (see sketch on page 15 for route through the plant). It also had a track about 60 centimeters wide for small cars. Most of the cars entering the plant were 60-ton cars; tank cars were 40, 50, and 60 tons.

7. The highway serving the plant connected with the Moscow-Shchelkovo-Monino highway. It was about 12 meters wide, asphalted, and was always open to traffic because trucks and cars passed at all hours. The plant had five or six three-ton trucks, an ambulance, a car for the director's use, and electric mail carts. vehicles were almost always kept at the shops.

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8. The plant had one infirmary with a doctor from Shchelkovo in attendance and every shop had a first-aid station with a registered nurse. only common types of accidents. In the sulphuric acid shop, persons had fainted on several occasions because of inhaling certain products. They were taken to the dispensary they drank an emetic. Cases of acid burns were common in this shop, especially when it rained, because the rain mingled with the existing gases, forming acid which burned the workers.

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9. A permanent plant guard corps stationed at points 23 and 54 on the sketch on page 15 guarded the plant. Guards were plant personnel who had completed their military service. there were 25 or 30; all were armed with pistols. A pass was necessary to enter the plant but once inside, access to the entire plant was free except for Shops Nos. 22, 46, 51, and 52 which only the employees of those shops could enter.

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10. Personnel in Shops Nos. 22, 46, 51, and 52 worked six hours daily with one day's rest out of every four and a month's annual vacation. The other shops worked eight hours daily with one day's rest a week and 24 days of annual vacation. Wages varied between 1,000 and 1,100 rubles monthly.

11. The Combine administrative staff was comprised of a general director, an economic director, a female director of the central laboratory, a Partorg organizer, a labor union chief, a Komsomol chief, a chief editor for the paper, and each shop had a chief, a deputy, a shift engineer, and a foreman. Until 1953, the general director was Zhitrov,

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Zhitrov was assigned to Niekhamkii (fnu) formerly deputy director, was made director. To increase production, he promised many things but never fulfilled his promises. 50X1-HUM

12. Shop No. 52, was staffed with a chief and his deputy, three shift chiefs who were engineers, a foreman, three sixth-category operators of the oxygenator, the precipitator, and the reactor , one operating the Mikka apparatus, one operating the drying machine, one fifth-category workman on the filters, and fourth-category workers included one fireman, two helpers, one each for the aspirator and the filtering machine. All other workers were of the third category. 50X1-HUM

13. Constant efforts were made to increase production. The plant tended to expand in the direction of the river and in the space separating it from a turbine plant. if necessary, the tiofos shop could be converted to the production of gases. 50X1-HUM

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14. Following is the legend for sketch of the first floor layout of Shop No. 52, on page 17. 50X1-HUM

(1) Room containing washer.

(2) Clean clothing storage.

(3) Dressing rooms.

(4) Corridor through which workers walked naked.

(5) Entertainment room.

(6) Wardroom for workers' personal clothing.

(7) Corridor leading to other sections of the shop.

(8) Packaging section.

(9) Toilets.

(10) Bunkers.

(11) Intake pipe.

(12) Hose.

(13) Open area within shop.

(14) Dryers.

(15) Tank containing water mixed with caustic soda.

(16) Tanks containing waste waters, used in reclaiming arsenic from the waters.

(17) Receiving tanks for quicklime and caustic water solution.

(18) Discharge for quicklime and caustic water solution.

(19) Mikka apparatus.

(20) Support for Mikka apparatus.

(21) Stairway to platform.

(22) Hopper feeding quicklime to No. 19.

(23) Hopper bucket loader.

(24) Coal furnace for heating the three dryers.

(25) Chimneys 25 meters high.

(26) Showers.

(27) Bunkers feeding filtered paste to the dryers.

(28) Sieve.

(29) Casks. 50X1-HUM

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15. Following is the legend for sketch of the second floor layout of Shop No. 52, on page 18. 50X1-HUM

(1) Office of the shop chief and deputy shop chief.

(2) Accounting office.

(3) "Red Corner".

(4) Stairway which started at the end of the corridor.

(5) Bunkers.

(6) First aid station.

(7) Corridor.

(8) Toilets.

(9) Pipe.

(10) Receptacles receiving product from No. 12.

(11) Orifice through which the product passed to No. 12.

(12) Tank in which product was beaten.

(13) Filters.

(14) Pipeline carrying beaten product.

(15) A beater smaller than No. 12.

(16) Bunker discharge.

(17) Stairway to platform of tank No. 12.

(18) Filters that separated the product from the caustic water.

(19) Arsenic bunkers.

(20) "Reactors" in which the copper sulphate, arsenic, and water were mixed with caustic soda.

(21) Gears spinning the filter tank.

(22) Drive belt for No. 21.

(23) Electric motor for Nos. 21 and 22.

(24) Receptacle receiving product to be filtered in Nos. 13 and 18.

(25) Iron catwalk at a height of 1.8 meters.

(26) Stairway to iron catwalk No. 25.

(27) Shop open area beneath network of piping feeding No. 30.

(28) Landing.

(29) Stairway leading to landing No. 28.

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(30) Precipitating tanks.

(31) Office of the shop chief.

(32) Shop laboratory.

(33) Chimney (continuation of No. 25 on sketch on page 17).

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16. Following is the legend to sketch of the third floor layout of Shop No. 52, on page 19.

(1) Office of the safety school.

(2) Study hall.

(3) Toilets.

(4) Landing at entrance to safety school.

(5) Stairway leading to landing No. 4.

(6) Bunkers.

(7) Electric motors driving air pumps.

(8) Vacuum tanks that controlled electrical motors No. 7.

(9) Pipes.

(10) Chimney (continuation of No. 25 on sketch on page 17).

(11) Tanks about seven meters in diameter that served to make the caustic water.

(12) Receptacle for product made in the Mikka apparatus.

(13) Stairway to No. 12.

(14) Stairway indicated as No. 29 in sketch on page

(15) Third-floor landing.

(16) Oxygenators.

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17. Following is the legend for sketch of the layout of Shop No. 40 on page 16.

(1) Unloading site.

(2) Open area.

(3) Railroad line.

(4) Ovens.

(5) Unloading point for Fe_2S_5.

(6) Interior railroad line.

(7) Ionization chambers.

(8) Electric control panel for the chambers.

(9) Cloakroom.

(10) and (11) Glover towers.

(12) Showers and toilets.

(13) Water tanks with helical pipes.

(14) Electric power station for motors producing a draft in the towers.

(15) Catwalk.

(16) Motors.

(17) and (18) Sulphuric acid tanks.

(19) Waste disposal.

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Comments:

1. the contents of the bottles were hydrogen and oxygen.

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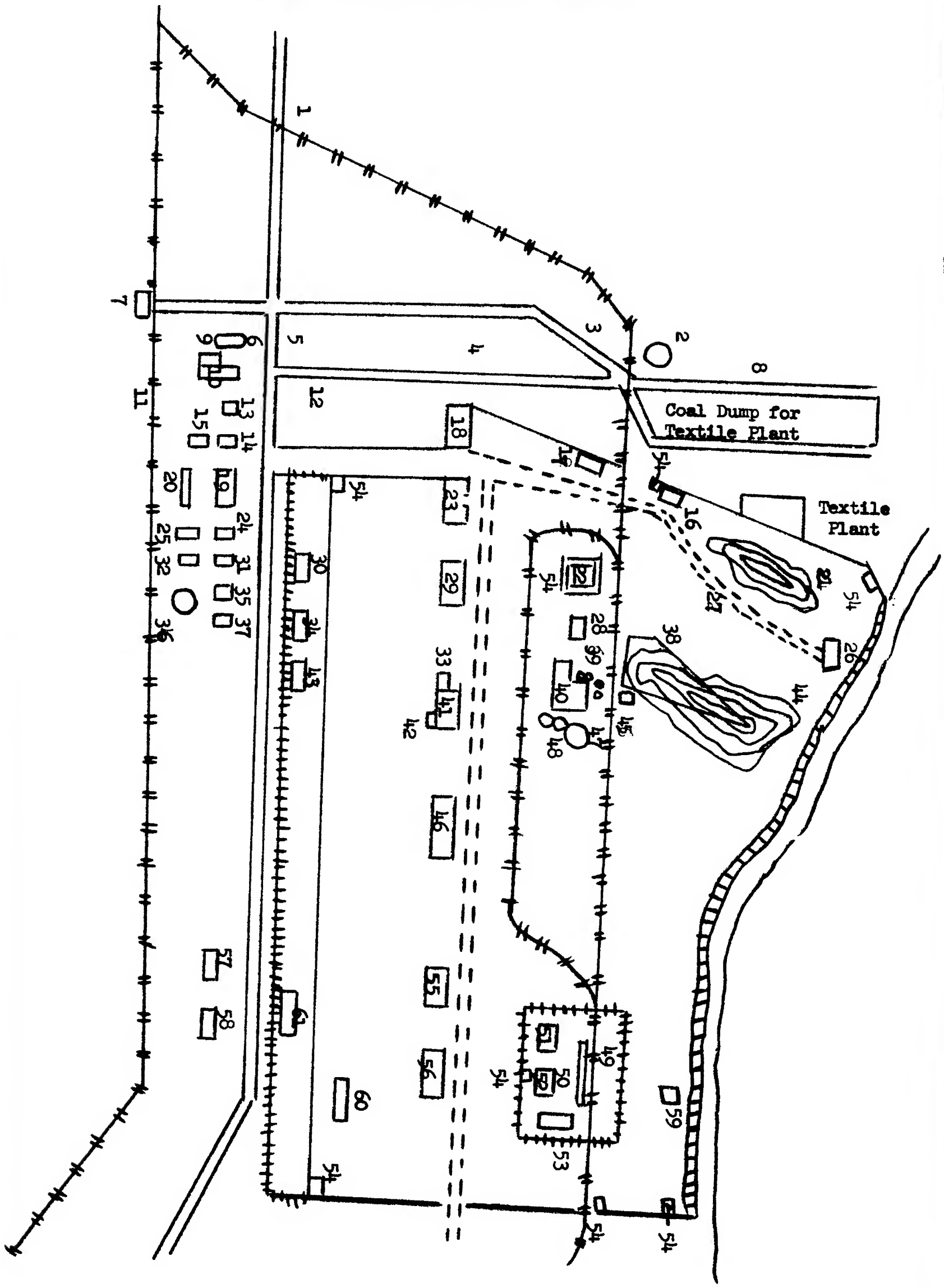
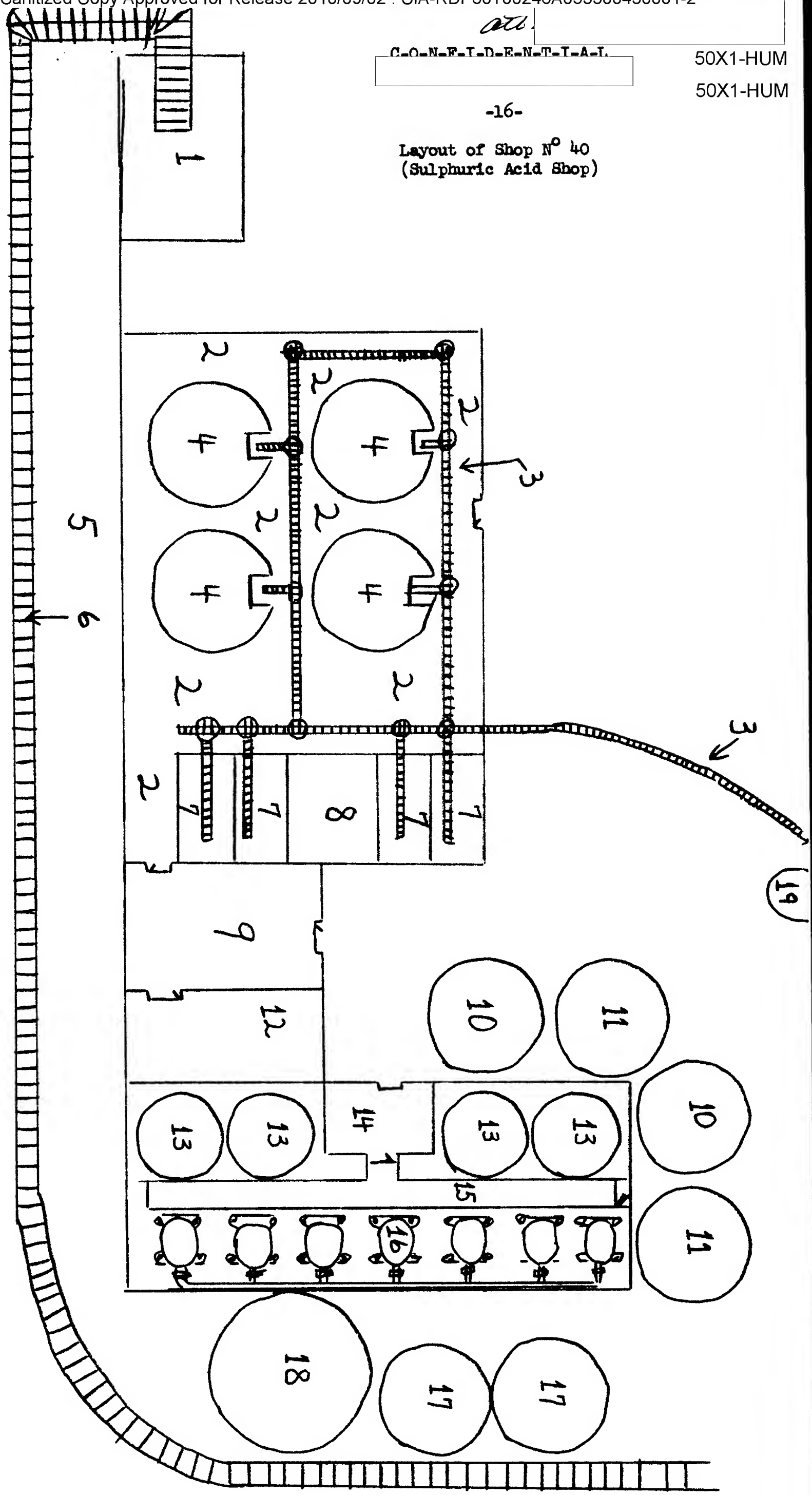
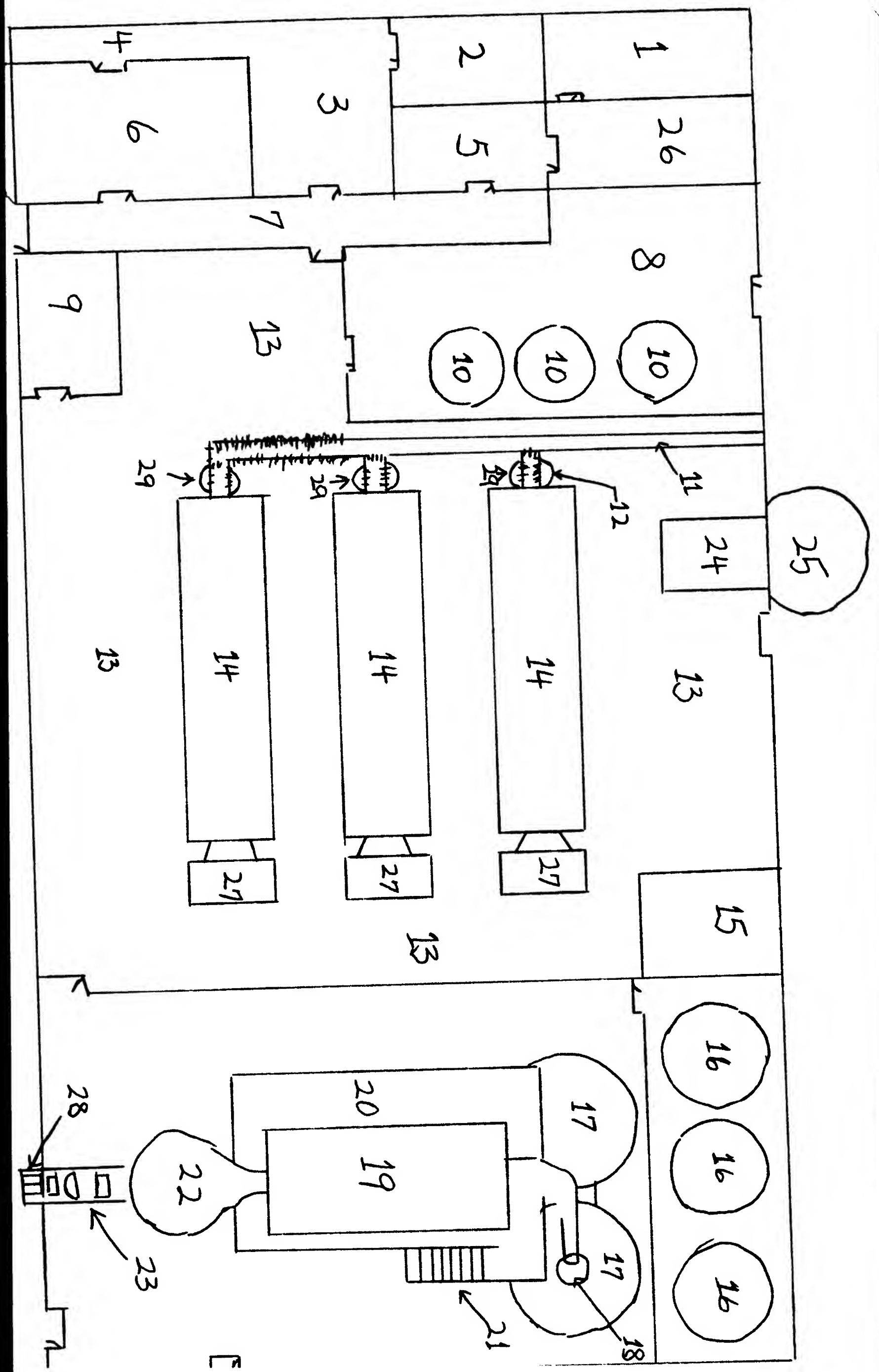
Layout of Shchelkovo Chemical Combine



Layout of Shop N° 40
(Sulphuric Acid Shop)



Layout of First Floor of Shop No. 52



Layout of Second Floor of Shop No. 52

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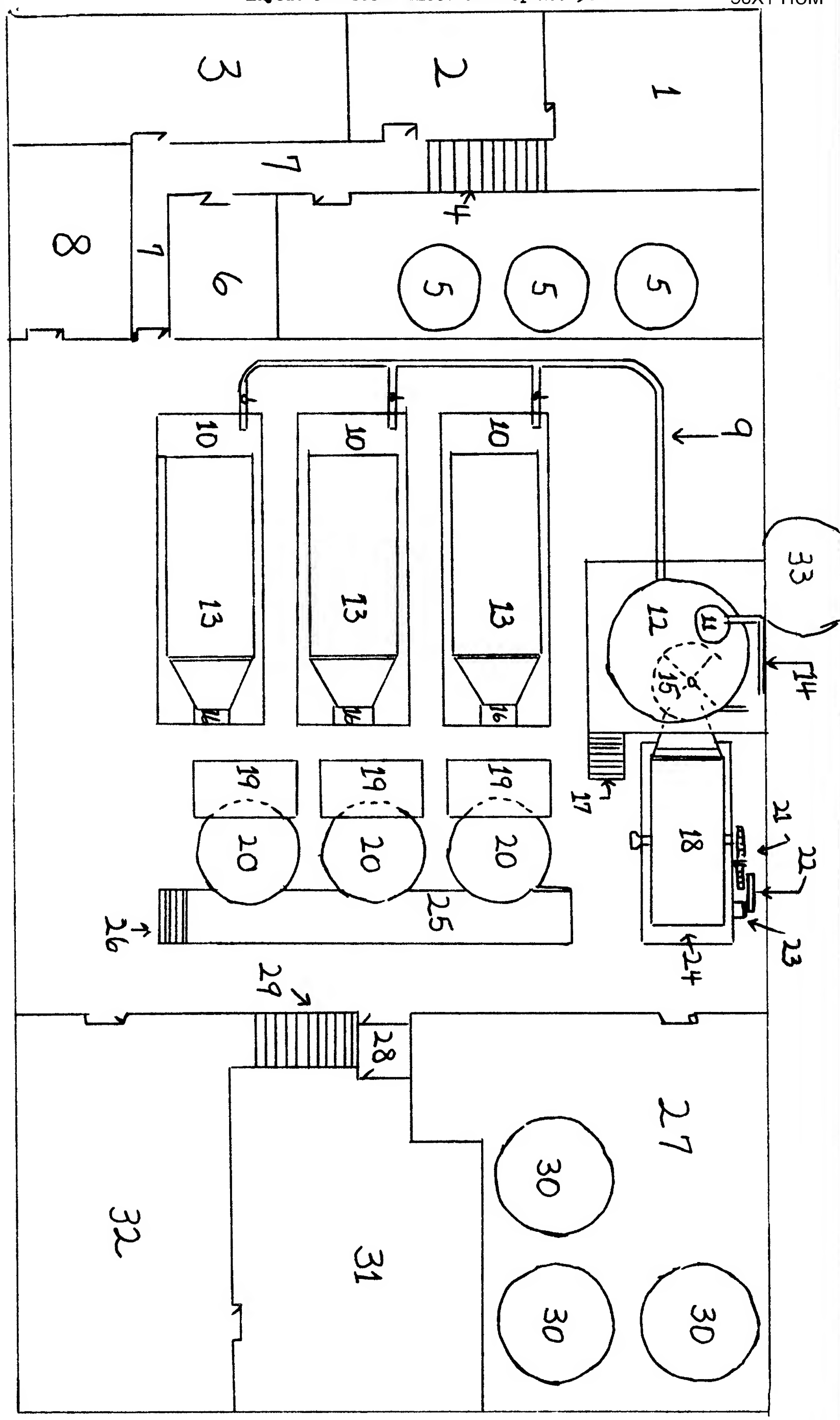

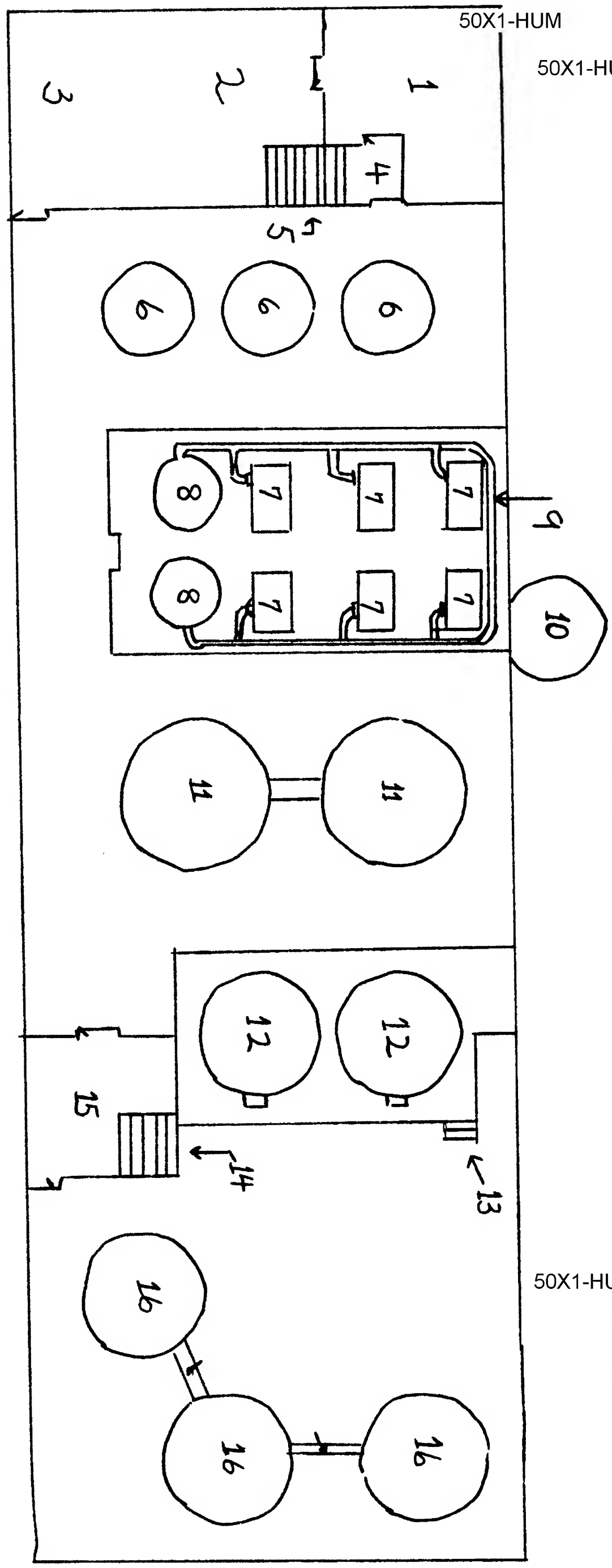

Layout of Third Floor of Shop No. 52

KARBOLIT CHEMICAL PLANT

1. The Karbolit Chemical Plant was located about 10 kilometers south of Orekhovo Zuyevo (N 55-49, E 38-59) in the village of Karbolit formerly known as Dubrovka (N 55-51, E 39-12). the plant and the village of Karbolit were located about two kilometers south of Orekhovo Zuyevo to 10 kilometers. this was a non-military or a non-defense plant subordinate to the Ministry of Chemical Industries.

2. The official name of the plant was the Karbolit Chemical Plant (Khimicheskiy Zavod 'Karbolit'), commonly referred to as Karbolit. It was situated in an area about one kilometer square which fronted on ulitsa Dzerzhinskogo. The other three sides of the plant bordered on open and wooded areas as opposed to other streets or populated areas. Although there were no rumors or visible evidence of such, there was more than sufficient space for a great amount of plant expansion.

3. The plant territory was surrounded by a plain wooden fence about three meters high. The fence had no barbed wire, but wooden watch towers about four meters high were intermittently spaced at unknown intervals along the fence. These towers were manned by male members of the plant security section the existence of these towers was intended for the prevention of thievery by the workers as opposed to providing strict security supervision as might be imposed at a defense plant.

Production

4. this was a non-defense plant and except for some small bakelite, plastic and textolite parts for aircraft, the plant produced plastic and bakelite parts for civilian use. This included various electrical fixtures and allied equipment such as switches, faceplates, plugs, sockets, etc., large plastic wheels used for an unknown purpose within the subway system, combs, various sized plastic wheels and toys.

All items produced at the plant were sent to the plant warehouse from where they were sent to their final destinations.

all items were packed in cardboard and wooden boxes.

all shipments to and from the plant were by truck.

Shops No. 5, 1 and 4

5. Shop No. 5, the plastic pitch shop had seven large kilns Shop No. 1, the civilian commodity shop Shop No. 4, the finishing and assembly shop, where additional workers were needed.

6. Shop No. 5 was located in a separate building (point 18), three stories high. On the second floor of the shop the chemicals were mixed and poured into the tops of the kilns. The mixture was later drawn from taps at the bases of the kilns which were situated on the first floor. The third floor contained a shop laboratory and the various shop administrative offices. Normally, the mixture was poured into appropriate forms which were then put aside to set. The forms were made of metal, presumably steel, and varied in shape accordingly.

the items had to undergo a finishing process in the various respective shops. Once the items had cooled and set, they were removed from the forms and were sent to these other shops. The exact finishing processes performed

consisted mainly of buffing and polishing. small blocks of

this mixture were prepared and then sent to Shop No. 6 where they were ground to a powder.

after the powder had been made, another unknown ingredient was added to and mixed with the powder. The function of the shop laboratory on the third floor was to make chemical analyses of the mixtures in each kiln.

7. Shop No. 5 worked three shifts, employed about 120 workers - 90 direct and 30 indirect - per shift. The shop laboratory also worked three shifts and employed about five laboratory technicians.

8. In both Shops No. 1 and 4 assembly line consisted of a small conveyor belt which moved along the center of a work bench on each side of which were five or six girls. each girl performed a separate operation on a particular item and passed the item to the next worker. When the item came to the end of a table, it was placed in a metal collecting container, and if not completed, taken to the next table for further work until finished. The completed items were then taken to the warehouse for packing, storage and/or shipment.

9. Shop No. 1 worked two shifts and employed about 100 workers per shift - about an 80:20 ratio of direct and indirect labor. Shop No. 4 worked three shifts and employed about 130 workers per shift with about a 100:30 ratio of direct and indirect labor. Neither of these shops had shop laborato

10. every item bore the plant trademark molded into the given item. The plant trademark was a simple rectangle with the word Karbolit. No other symbols, numbers or dates were included.

Plant Chemical Technical School

11. The school was located on the third floor of the large brick building (point 9) immediately behind the employees' plant entrance (point 8). the school was also subordinate to the Ministry of Chemical Industries as opposed to the Ministry of Higher Education or any other related institutes.

12. The school had two faculties; the chemical technical faculty and the chemical mechanical faculty. Both courses of instruction were four years in duration and the school year was from September to June. Graduates of the former received the title of technician (laboratory) and the latter, mechanical technician.

13. the entire student body totaled 1000 students with 60 percent of the students enrolled in the mechanical course and 40 percent in the technical course. An approximate 70-30 ratio existed between the number of male and female students respectively. Enrollment procedures required a student to have had completed a seven year school, and to take a general type entrance exam and a physical examination. No other requirements were necessary. Students could enroll from anywhere in the USSR but the majority were from the immediate vicinity of Orekhovo Zuyevo. Dormitory facilities were available in the village of Karbolit but most of the students lived at home. The student's monthly stipend for the first three years was 200 rubles, and for the fourth, 400 rubles. The school hours for the full time students were from 0800 to 1600 hours. The part time evening courses offered to the workers - also four year courses of the same nature - were

scheduled from 1900 to 2200 hours. The latter courses were accelerated. 50X1-HUM
Upon graduation, the students were assigned by the Ministry to the Karbolit Plant and/or other chemical plants throughout the USSR. Students could choose a work location but no guarantee was given as to recognition of their desires. a total of 400 students graduated annually. This included about 300 from the full time course and 100 from the evening 50X1-HUM
school.

Security

14. the security at the plant was provided by regular civilian type plant guards the guards who controlled the employee and vehicular entrances were not armed.

15. All employees were issued the standard type plant pass which they retained in their possession at all times. They never had to surrender them and took them home with them. there were no secret or restricted shops and all workers had free access to the shops 50X1-HUM
within the plant complex, but no one roamed around.

Civil Defense Instruction

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16. a series of compulsory one and one-half hour civil defense lectures given in five successive days at the Karbolit Plant. The lectures included information on the theory of atomic energy, its development, the atom bomb and its development, destructive powers, immediate and after effects, including the radii of destruction areas and radioactive material. These lectures also encompassed the precautionary measures that should be taken before, during and after an atomic attack. Nothing regarding bacteriological or chemical warfare was ever mentioned and/or discussed.

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17. These lectures were always given by plant employee personnel - usually the Shop Chief - as opposed to military personnel on active duty, reservists, or Voyenkomat officers. The lectures were based on material prepared, by the Ministry of Defense or some other military ministry; exact preparation of this material was unknown. The material was prepared in 50X1-HUM
broshure form and disseminated, again presumably, from Moscow to all cities and localities. A question and answer period usually ensued but since the lecturer was not a specialist in the field, he could only refer back to the brochure and answer the questions based on the information contained therein.

18. Accordingly, only basic defensive measures against atomic attack were mentioned. This included the fact that the populace would be pre-warned of an ensuing attack and that then they should take cover, remain in a building, preferably in a basement. They were also advised to remain where they were until such time as decontaminating and rescue units would come by to clear the area or evacuate the personnel, if necessary. They were advised that they would be given ample warning of an ensuing attack by radio and sirens but no mention was made of how this warning and advance notice were to be achieved. They were also advised of the dangers of radiation and that special clothing, covers, etc., were effective against radiation. However, these items were not demonstrated or issued to the populace nor was any mention made whether or not any would be issued and if so, when. They were

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just told that such were in existence

19. No mention was made about storing food, water, medical supplies, clothing, etc. against radiation and nothing in this regard was being done.

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20. The lectures for the former two categories were conducted in local clubs and other predesignated places and for the latter, in the respective schools. these lectures mandatory

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Telephone Systems Within the Plant

21. The Karbolit Plant had two telephone switchboards, one in a separate telephone building and the other in the main plant administration building. The former was an internal phone system and the latter was for both intra-plant and outside plant calls.

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Phones were located in all the shops in the shop administrative offices but for intraplant use only. Outside calls could not be received or made.

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22. all outside calls from the main administration building had to go through the main telephone office in Orekhovo Zuyevo. There were no direct lines or switchboard by which the plant could handle their own calls.

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The plant had no teletype system.

23. Orders and instructions were almost always transmitted throughout the plant in written form. Rarely was the phone used in this manner with the possible exception of last minute changes, instructions or emergencies. Undoubtedly, it would be followed up by an official letter or memo.

Personalities

24. former plant director, Kheykin, and his successor and director Mikheyev. during WW II and up to about 1946, an unknown number of German PW's worked at the plant. a small number of German chemists were employed at the plant up to about 1949-50 at which time they were removed from the plant, destinations unknown. most of the latter were German civilians rather than PW's.

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Plant Layout

27. The following legend identifies numerical designations on sketch of a partial layout of the Karbolit Plant, page 10 :

Point 1. Wooden fence, three meters high.

Point 2. Dzerzhinskaya ulitsa. A cobblestone surfaced street about eight meters wide that led into Orekhovo-Zuyevo.

Point 3. Warehouse. This was a single story brick building about 120 x 120 x 8 meters in dimension. All raw materials and finished products were stored here; the latter were also prepared for shipment and shipped from this warehouse by truck.

Point 4. Vehicular entrance consisting of two wooden gates which opened inwardly and which were controlled by the plant guards stationed at the guard hut (point 5). The entrance was about six meters wide.

Point 5. Guard hut.

Point 6. Plant building containing a number of shops. This was a large single story brick building approximately 150 x 100 x 8 meters in dimension with a slightly pitched skylight roof. This building contained the following shops:

a. Shop No. 4. This was the finishing and assembly shop for the small items produced at the plant. The shop area was about 50 meters square and contained an unknown number of work tables equipped with conveyor belts.

b. Shop No. 14. This was the finishing and assembly shop for the larger items produced at the plant. This shop area was also about 50 meters square.

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c. First aid station. This was a small area about 15 x 15 x 4 meters in dimension with several small treatment rooms staffed by at least one nurse during all three shifts and a medical doctor and dentist during the daylight shift. 50X1-HUM

d. Shop No. 2. this was the shop wherein all the plastic, bakelite, and textolite aircraft parts were finished and assembled. The area of this shop, she estimated, was 100 x 50 meters in dimension.

e. Shop No. 3. This was the press shop, an area about 100 x 50 meters in dimension. The exact nature of this shop's work or equipment was unknown.

Point 7. Shop No. 6. This was a single brick building approximately 70 x 20 x 6 meters in dimension with a slightly pitched skylight roof. This was the shop wherein the blocks of plastic were re-ground to a powder and mixed with another chemical substance.

Point 8. Employee entrance. This was a small brick building approximately 10 x 5 x 4 meters in dimension with a flat roof. It contained a number of pass control booths and the guard office.

Point 9. Plant Chemical Technical School. This was a large three story brick building approximately 100 x 70 x 12 meters in dimension. The school and the classrooms were actually located on the third floor. The major portions of the first floor contained a shop, number unknown, wherein the plastic mixture in dry form was prepared prior to being sent to Shop No. 5. The second floor contained the administrative offices for the shop and a number of other unknown offices.

Point 10. Fire station. This was a two-story brick building approximately 25 x 10 x 8 meters in dimension. This was the plant fire station as well as the fire station for the workers' village.

Point 11. The unknown part of the plant territory.

Point 12. Boiler house.

Point 13. Main plant laboratory (NIL - Nauchno-Isledovatelnye Laboratorii - Scientific Laboratories). This was a two-story brick building approximately 30 x 30 x 8 meters in dimension with a slightly pitched skylight roof. Both floors were believed to contain laboratories and their related offices.

Point 14. Shop No. 1. This was a small single-story brick building approximately 20 x 20 x 5 meters in dimension with a slightly pitched skylight roof. This building contained the civilian commodity shop.

Point 15. Plant dining hall. This was a three-story brick building approximately 40 x 30 x 12 meters in dimension with a slightly pitched skylight roof. The first and second floors contained the dining

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hall and kitchen facilities and the third floor contained the drafting and blueprint shops of the plant.

Point 16. Plant Machine Shop. This was a single-story brick building approximately 70 x 50 x 8 meters with a slightly pitched skylight roof. This was the maintenance and repair shop for the plant.

Point 17. Shop No. 7. This was a single-story brick building approximately 50 x 40 x 5 meters in dimension with a slightly pitched skylight roof. This was the shop where the textolite used at the plant was prepared.

Point 18. Shop No. 5. This was a three-story brick building approximately 40 x 30 x 12 meters in dimension with a slightly pitched skylight roof. This was the shop and building wherein the plastic and bakelite mixtures were prepared in kilns. The first floor contained the bottom of the kilns and the taps from which the liquid mixture was drawn off into the various molds. The second floor contained the top of the kilns and the mixing rooms wherein the kilns were re-filled. The third floor contained the shop offices and laboratory.

Point 19. Water station.

Point 20. Telephone center. This was a small wooden building approximately 20 meters square which contained the plant telephone center, both internal and external.

Point 21. Plant Administration Building. This was a two-story brick building approximately 50 x 30 x 8 meters in dimension containing all the various plant administrative offices.

Point 22. Village of Karbolit. This village, formerly known as Dubrovka and now more commonly referred to as Karbolit, was about a kilometer long and a half a kilometer wide. It had no particular symmetry and consisted of an unknown number of two -three story brick apartment buildings, single-story wooden barrack type buildings, a few single family type wooden homes, all of which were occupied by the plant workers. There were no street names and most of the streets were unpaved, dirt roads. There were no sidewalks, however the village had street lights spaced intermittently throughout and also had a subterranean sewer system. During WW II, this village was used as a German PW camp. [redacted] the population of this village was about 4000 inhabitants. The village and the plant were serviced by a bus which traveled to and from Orekhovo Zuyevo every half hour. The bus, which was unnumbered but had a sign on the front 'Karbolit', traveled on ulitsa Dzerzhinskaya. The turn around point in Karbolit was at the plant. The run was about a half hour in either direction and the one way fare was 50 kopeks.

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Sketch of Plant Layout, Karbolit Chemical Plant, Dubrovka (now Karbolit), Moscow Oblast (not to scale)